

### **REMARKS**

**FIG. 1, FIG. 2, and FIG. 3 of Blackburn'109** relate to a mold with the object of removing a pottery ware in irregular or asymmetrical shape by injecting air upon removal of the ware when removing the clay objects from mold is becoming impossible because there are many sticking areas between the mold and the ware due to different pressure portions resulted from wet pressing for forming clay objects.

Specifically, as shown in **FIG. 4 of Blackburn'109**, a molding knife (scrap knife) on the top cannot mold if air is injected into the mold by rotating spinning wheel (roller machine) when molding. Therefore, after molding, the use of the molding knife is likely for simply removing the clay objects from the mold, or is just for drying the gypsum.

In the case of **FIG. 5 of Blackburn'109**, spaced apart holes on the conduit of air ejection tube are wrapped with a permeable fabric material such as gauze in order to avoiding clogging with a gypsum sludge. For this reason, an amount of air pressure reaching the surface of the gypsum is becoming very small, so the effect of the air pressure is just for pushing the moisture of the gypsum wetted during long time rather than removing the clay objects.

In addition, a variation of hole's depth on air ejection tube become larger. For this reason, air will be focused on near surface due to the characteristic of air ejection, and a large dose of air will be injected. Even if an air is continuously injected, an air cannot sufficiently reach at the deep parts of the holes, so imbalance of air ejection will become getting up. Therefore, the above-mentioned mold of Blackburn' 109 does not seem to have been related the effect of removing or dehydrating, or also effective functions.

On the other hand, the patent of the present invention comprises producing lots of voids in a gypsum mold, while the gypsum sludge is solidified into the gypsum mold, by supplying the air of high pressure when solidifying by injecting the gypsum sludge into support means for supporting the wire net in order to maintain constant depth inside the gypsum mold, in other

words, forming an air supply hole in the gypsum mold. At this time, when air of high pressure is ejected from all the sides of the air ejection tube, capillaries as a crystal structural of the gypsum in the gypsum mold can be produced, and the air ejection holes, which are similar to lots of craters and are not shown, can be formed toward the surface of the gypsum, because the air ejection tube fixed to the wire net and formed of fibroid material, so their surface is large, and the wire net is located at a distance of about 2-3 centimeters from the surface of molding frame. The air ejection holes resulted from above process is configured to directly eject the air of high pressure into the surface of the gypsum and support the molding clay when molding a clay, and the clay pressed on the air film have the structure, which can be freely molded by pneumatic molding into a clay plate with a uniformly texture.

The reasons for passing through those steps are different from the molding method described in **Blackburn'109** and are as follows: like contents of **claim 2** in the patent of the present invention, the air film can be formed by air ejected between the gypsum and the clay by the automatic location sensor in the pressing molding by a hydraulic cylinder, and the clay pieces can be made evenly dispersed on the surface of the gypsum and can be maintained as the form of plate regardless of pressure variation applied according to the pieces and shape of the gypsum mold.

In addition, using this invention can be maintained constant distance without pressing together to one side or center, or scattering about in all directions in the gypsum mold when pressing of clay pieces in a steady thickness of gypsum mold even though the undulating of the plate by relief sculpture. Therefore, there are no variations on the locations of the clay pieces even though the moisture is evaporated due to quickly drying just after molding. In addition, there is a shape memory effect of clay plate, in which the shape memory effect is ability to return the original distance of clay pieces when sintering (**mullite-silicatisation: when becoming ceramic**) of plasticity even though there is a little bit of dry deformation.

This invention relates to a method for molding the slab clay with repeated pressing, in which the pressing time may be set to 1-2 seconds and the slab clay has room temperature and moisture content of 15-20 weight percent. Therefore, the slab clay does not directly rub on the

surface of mold in order to avoid the friction, and the abrasion become significantly reduce and with forming air film can absorb impact, which is applied on the gypsum mold. And then the mold and products can be separated as soon as finishing the molding. So the invention does not use an additional step for removing the product from the mold, but the method of Blackburn'109 should require a special step for removing the products from the mold.

As a result, using the method of **Blackburn'109** instead of the method of the present invention in the case of ceramic plate of tile type with relief sculptures, the center, in which the slab clay is laid and is pressed, has high pressure than other parts. Therefore, the clay pieces are driven to the center, so the center become harder. For this reason, plate products of clay tile having constant size cannot be molded and the plate products become be twisted and have a line deformation with convex edges and sides using the method of Blackburn'109 instead of the method of the present invention when moisture is drained during heat treatment (ceramic).

**FIG. 1** and **FIG. 2** of **Blackburn'110** pointed by US patent examiner relates to a jiggling (rotating) mold for type of plate products similar with the products from a mold of **FIG. 1** and **FIG. 2** of **Blackburn'109**. Therefore, the above two molds are completely irrelevant to an air ejection when molding of the present invention.

Also, **FIG. 3**, **FIG. 4**, **FIG. 5**, and **FIG. 6** are seen that their ejection tubes are irrelevant to molding, and do not have constant distance, so we can not exactly distinguish whether or not the ejection tubes is for product drying, product removing, or moisture ejecting. And **FIG. 7**, etc, **Faessle'471**, and **Nemeskeri'753** pointed by US patent examiner are also seen that their molds are for drain of moisture, in which if the surface of gypsum wet, moisture will be invaded into the inside of the gypsum, and also the molds are for dry of the gypsum mold, when injecting mold is driven just like slip casting, such as a vase and continuously produced products. So, all those methods are likely to the similar methods.

However, even though the structure of air ejection tube mounted on the gypsum mold in the above-mentioned references cited have similar to that of the present invention, use and function of pneumatic, such as a mounting location, a type of ejection, an amount of ejection,

and so on are significantly different. In addition, with comparison between the references cited and the present invention, the criteria for forming air vents when producing the gypsum mold, such as a movement of air, a point of ejection, a durability of ejection, and so on in the present invention are much more different from the above mentioned references cited. And, a mass-production system using an automatically control of high-pressure air induced by molding between the clay and the gypsum are also different from each other.

Without respect to the above features, the effects of the air ejection tubes just having a shape in the above mentioned references cited are significantly different from the effects of the present invention. Therefore, the present invention is not obvious to persons of ordinary skill in the art.

In view of the amendments and remarks made above, it is respectfully submitted that all pending claims are in condition for allowance, and such action is respectfully solicited.

Respectfully submitted,

Date: April 8, 2010

/James E. Bame/

James E. Bame

Regis. No. 44521

Tel: 213-384-7200

IPLA P.A.

3580 Wilshire Blvd 17th Fl.

Los Angeles, CA 90010